

NEW JAPANESE FUNGI

NOTES AND TRANSLATIONS—III

TYÔZABURÔ TANAKA

MASSARIA MORICOLA I. Miyake sp. nov. in Sangyô Shikenjô Hôkoku (Technical report of the Imperial Sericultural Experiment Station), Tôkyô, Japan. 1st: 318, pl. 16, figs. 6, 7, 8. T. 5, xii, Dec. 1916. (Japanese.)

Perithecia thickly scattered, subepidermal, penetrating the epidermis with elongated ostiola, spherical or ellipsoidal, 300–400 μ in diam., 280–372 μ in height, the inside of ostiolum and adjacent area covered by short periphysatic hairs, containing few asci; asci cylindrical or ovoid, short stipitate, 140–200 \times 37–46 μ , paraphysate; ascospores biseriate or irregular, hyaline and unicellular at juvenile stage but quickly developing into 4-celled dark-colored mature spores, the contents of which are first characteristically represented by comparatively large shiny oil globules, soon disappearing and replaced by granular protoplasm scarcely permitting the light to pass through, 52–65 \times 13–17 μ , cylindrical, not constricted at the septum; gelatinous envelope none.

On twigs of *Morus alba* (common).

Type localities: Gifu-ken (prefecture), Kaidzu-gun Kaisai-mura, Mar. 1909, I. Miyake; Fukui-ken (pref.) Ôno-gun and Hida-no-kuni (Gifu prefecture) Mashita-gun, Shimohara-mura, Mar. 1909, K. Hara; Nagano-ken (pref.) Shino-ina-gun, May, 1910, I. Miyake; Tôkyô-fu (pref.) Nakano-chô Jan. 1915, I. Miyake; Tochigi-ken (pref.) Utsunomiya-shi and Fukushima-ken (pref.) Fukushima-shi, Mar. 1915, I. Miyake; Kyôto-fu (pref.) Ayabe-chô, Apr. 1915, I. Miyake.

Illustrations: 3 black and white lithographic figures showing detailed structure of the fungus.

The juvenile ascospores very much resemble those belonging to other genera, but close examination of mature spores will show the characteristics of the genus *Massaria*.

MASSARIA JAPONICA I. Miyake sp. nov. in Sangyô Shikenjô Hôkoku (Technical report of the Imperial Sericultural Experiment Station), Tôkyô, Japan. 1⁵: 319, pl. 16, figs. 9, 10, 11. T. 5, xii, Dec. 1916. (Japanese.)

Perithecia gregarious, subepidermal, with ostiola erumpent, elliptical, 400–500 μ across and 250–320 μ high; perithecial walls pseudo-parenchymatous, 70–100 μ thick, black, walls and bottom surrounding inner space consisting of nearly colorless and sub-transparent cells; asci cylindrical, 130–160 \times 20–25 μ , octosporous, paraphysate; ascospores dark ink-colored, 4-celled, conspicuously constricted at the middle septum, occasionally but not distinguishably so at the other septa, containing one large oil globule in each cell, 30–35 \times 9–11 μ ; gelatinous envelope none; paraphyses filiform, about 1 μ thick, abundant, exceeding asci in length.

On twigs of *Morus alba* (not common).

Type localities: Gifu-ken (prefecture) Ena-gun Kashimo-mura, Mar. 1909, K. Hara; Iwate-ken (pref.) Hanamaki-chô, Apr. 1915, I. Miyake.

Illustrations: 3 black and white lithographic figures showing detailed structure.

Easily distinguished under the microscope from other related species by having the inner layers of the perithecial walls nearly colorless and sub-transparent.

KEY TO THE FOUR SPECIES OF MASSARIA ABOVE DESCRIBED¹

- (A) Ascospores with gelatinous envelope.
 (a) Ascospores 3–5, usually 4-septate.....*M. phorcioides*.
 (b) Ascospores 3-septate*M. Mori*.
 (B) Ascospores without gelatinous envelope.
 (a) Ascospores not constricted at the middle septum.....*M. moricola*.
 (b) Ascospores constricted at the middle septum.....*M. japonica*.

Three species of *Massaria* are already known to be parasitic or saprophytic on *Morus alba*, but all can be distinguished in some way from these four new species.

Massaria epileuca B. and C. is characterized by having asco-

¹ For descriptions of *M. phorcioides* and *M. Mori*, see the second article of this series.

In the description of *M. Mori*, the two following lines were unfortunately omitted in the final printing:

ing of black pseudo-parenchymatous tissue; asci cylindrical, shortly pedicelled, 140–160 \times 40–50 μ , octosporous, paraphysate;

spores with smaller terminal cells; *M. Antoniae* Far., which is related to our *M. phorcioides* by its ascospores having a large number of cells, can be distinguished by 6- (rarely 7-8) celled spores, instead of 4- (rarely 6-7) celled as in the latter species. *Massaria olivaceo-hirta* Cooke is rather doubtful but may differ in the color and form of ascospores.

MYCOSPHAERELLA HORII K. Hara sp. nov. in Nippon Engei Zasshi (Journ. of Hort. Soc. Japan), 29³: 10, illus. (p. 9, figs. 1-6). T. 6, iii, Mar. 1917. (Japanese.)

Spots irregularly orbicular, about 3-6 mm. across, reddish-brown and frequently changing to gray when mature; margin definite, raised, blackish-brown, punctated with black, minute perithecia; perithecia gregarious or scattered, punctiform, at first immersed then partly erumpent, black, globose or elliptico-globose, 60-100 μ ; perithecial walls pseudo-parenchymatous, cells rather indefinite, about 3-8 μ across, blackish-brown, carbonaceous; ostiola slightly raised, warty or short papillate with openings about 5-7 μ across; asci caespitose, clavate-cylindrical or oblong-ovoid, obtuse, stipitate, octosporous, 30-40 \times 7-10 μ ; ascospores biseriata or inordinate, oblong-ovoid, uniseptate, not usually constricted; terminal cell slightly wider and much rounded at the apex; basal cell rather acuminate toward the base though not pointed at the end and nearly as round as the apex, colorless and hyaline, 9-12.5 \times 2.5-3 μ .

On leaves of *Citrus*.

Type locality: Hamana-mura, Inasa-gun, Shidzuoka-ken, Japan, June, 1914, Katarô, Shimidzu.

Japanese name of disease: Kasshoku Ko-maruboshiyô (small, brown, round-spot disease).

Illustrations: 6 text figures showing detailed structure of the fungus.

Dr. Shôtârô Hori, in Engei no Tomo (Friend of Horticulture) 9⁷: 40-45, Tôkyô, July, 1913, considers the cause of this disease to be *Phyllosticta curvarispora* Hori sp. nov. As no description of the fungus was given there or elsewhere, there is no way to determine whether this imperfect fungus is a form of *Mycosphaerella Horii*, but the existence of such relationship is suggested as very possible since many species of these two genera are known to be related. The fungus mostly attacks navel and Unshû (Satsuma) oranges, according to Dr. Hori.

Phyllosticta citricola Hori ex K. Hara in Nippon Engei Zasshi (Journ. of Hort. Soc. Japan), 29³: 11, illus. (p. 9, figs. 7-9). T. 6, iii, Mar. 1917. (Japanese.) First published by Hori as *Phyllosticta citricola* Hori sp. nov. in Engei no Tome (Friend of Horticulture), 9⁷: 627, T. 2, vii, July, 1913, but with no description of the fungus, symptoms alone being given.

Pycnidia punctiform, black, first immersed then slightly raised and disclosing the upper end, gregarious or scattered, globose or depressed-globose, 100-130 μ in diam.; perithecial walls membranaceous, cells about 4-7 μ , dark-brown, carbonaceous; ostiola terminal, papillate or even; openings round, about 10-12 μ across; pycnospores globose, ovoid, or short-ellipsoid, 1-nucleate at the middle and very much granulated all over, colorless and hyaline, 6-11 \times 6-9 μ ; the spore mass does not seem to form the thread-like protrusion covered with mucilaginous matter.

On leaves of *Citrus*.

Type locality: Toyoda-mura, Abe-gun, Shidzuoka-ken, coll. by Okada, July 6, 1914.

Japanese name of disease: Kasshoku Ô-maruboshiyô (large, brown, round-spot disease).

This disease is reported to have caused great injury to Natsudaidai (Japanese summer orange) in the province of Toyoda-gun, Hiroshima-ken, and also in Abe-gun, Shidzuoka-ken. Hori reported it as also attacking the Unshû (Satsuma) orange.

BUREAU OF PLANT INDUSTRY,
WASHINGTON, D. C.